

GMS Evolution Well Intervention with Cantilever

GMS Evolution and the Cantilever workover system has been designed and built to enable heavier workover operations from this self-propelled jack up barge. The GMS design enables execution of Heavy Well Intervention scopes traditionally completed with an expensive drilling rig by utilising the superior marine efficiencies of the GMS 4-Legged self-propelled jack up barges.

Benefits:

Cost Benefits	Operational Benefits
<ul style="list-style-type: none"> Up to 6 days for Drilling Rig versus 1 day with Evolution to move location Performing Workovers (ESP Changes) on multiple platforms, averaging 2 weeks each, Evolution can complete up to 24 Wells per Calendar year while a typical non propelled drilling jack up would complete 18 wells. 	<ul style="list-style-type: none"> Nimble and fast moving between wellheads / no need for Tugs Purpose built for Workover operations, increasing efficiency Substantially less POB requirement High quality solutions with modern technology Workover old platforms with structural integrity issues

GMS Evolution with Cantilever	GMS Evolution Top Drive System	Operational Capability
		<ul style="list-style-type: none"> ESP change out Plug and abandonment Re-completion Side-tracks Slot Recovery Workovers Coil Tubing and stimulation

GMS Evolution was recently contracted for the first well intervention scope for an Arabian Gulf NOC using the GMS unique technology. The work scope would include various operations which would require utilization of the unique Cantilever Workover system with a 2000 Horsepower Rig and integral well Control Fluid Circulation System.

Watch the Evolution in the Field - <https://youtu.be/r8CCoMkeJDU>

GMS Evolution



Marine

- Evolution jacked up alongside another barge to transfer Well Services equipment at an offshore anchoring point
- Well Services Equipment was moved across and commissioned on Evolution in a **record 2 days** utilising Evolution's modern cranes
- Evolution sailed to and approached the Platform Tower under its own power and positioned in DP2 Mode without the need for any expensive tugs
- Evolution Jacked up and deployed the Cantilever Well Intervention System over Platform Well Centre and was ready to commence Well Operations within 3 hours – an operation which typically takes 24 plus hours with traditional Drilling rigs, thus **90% time saving**.

GMS Evolution



Rig Up & Down

- Rig Up of well services equipment was completed in 31 hours against a normal of 36 hours. **A 15% time saving.**
- Rig Down of Well Services equipment and preparation for Barge Move in 14 hours

Well Operations

- Operation required to run in hole several Bottom Hole Assemblies (BHA's) to conduct complex operations including Scale Milling and Jetting to increase Well Production.
- Heavy Coil Tubing (CT) of up to 2 & 3/8 inches was utilized.
- The CT injector head was supported in Evolution's Well Intervention Derrick. This allowed for more efficient and safer Bottom Hole Assembly (BHA) tool changeouts over traditional methods where the CT Injector head is supported by a crane.
- 10 BHA's (Bottom Hole Assemblies) were run into the well on Coil tubing (CT), averaging 2 hours per change-out. These change-outs typically take 6 hours each with CT support methods typically used in the region. **Offering a 66% time saving** on Traditional CT support methods.
- Well Services Equipment was moved across and commissioned on Evolution in a record 2 days utilising Evolution's modern cranes



Coil Tubing on Evolution



Quick BHA Changeout

Evolution Cantilever Specifications

Description	Imperial	Metric
Derrick: Rack and Pinion		
Free Height	56 Ft	17m
Top Drive		
Power	2000 HP	1491 K Watts
Pull	551 KLbs	250MT
Rotational Torque	32 Kft/Lbs	43.4 kN-m
Make Up/ Break Torque	80 Kft/Lbs	108.5 kN-m
Rotation	200 RPM	200 RPM
Pipe Handling - Automated with PH Crane and conveyor system		
Pipe size	2 7/8" - 14" OD	
Conveyor capacity	40-60 pipes/hours	40-60 pipes/hours
Load	67.4 KLbs	300kN
Tripping speed:	1300 Ft/Hr	400 m/Hr
	30 joints/Hr Range 3	30 joints/Hr Range 3
Pipe Length - up to range 3	45ft	14m
Iron Roughneck		
Make Up/ Break Torque	100 Kft/Lbs	135.6kN-m
Pipe size	2 7/8" - 10" pipe	7 cm -25.4 cm
Bushing pass through		
Master Bushing	37 1/2"	95.25 cm
Pass through	49 1/2"	125.7 cm
Mud System		
Active pits	1,500 BBL	240 m3
Barge internal tanks Brine storage	1,855 BBL	295 m3
Mud Pumps 2x		
Power rating	1,300 HP each	970 K Watts
Flow	441 GPM each	17,190 LPM
BOP's		
Size	13 5/8"	34.6 cm
Pressure Rating	5,000 PSI	345 Bar
Cantilever		
Longitudinal Skid to Well Centre	49 Ft	15m
Transverse Skid Well Centre	23 Ft	7.0m
Length -Total/main deck/Work deck	97 Ft/ 78 Ft/ 19 Ft	29.6 m /23.7m /5.9m
Width - Total (Work deck)	39 Ft (32.8 Ft)	12m (10m)
Height (Head room)	16.7 Ft (14.8 Ft)	5.1m (4.5m)